



THERMAL DYNAMICS®

AUTOMATION

XT™-300

High Precision Plasma Cutting Torch



**Upgrade your HD3070® System Torch
to the new XT™-300 Torch for:**

- Lower Cost per Foot/Meter
- Better Cutting Performance
- Longer Parts Life
- Lower Price Consumable Parts
- Easier Operation

XT™-300 Torch . . . for a better cutting experience!

Automated Plasma Cutting

XTTM-300

High Precision Plasma Cutting Torch

The XTTM-300 Precision Torch . . . for a Better Cutting Experience!

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The XTTM-300 . . . More Than Just a Replacement Torch!

The XTTM-300 automated torch actually upgrades your system and provides better performance, cutting precision and cost-savings beyond the capabilities of your present torch. The XTTM-300 is the most technologically advanced, precision-engineered plasma torch available today. Patent-pending torch technology guarantees high tolerances and consistently high performance.

Every Detail Sets This Torch Apart

Longer Parts Life

Cut and compare. The XTTM-300 consumable parts can cut almost twice as much material as the PAC[®]186 before replacement, without sacrificing cut quality.

- Negligible Dross Formation
- Sharp Edges and Narrow Turning Radius
- Smooth, Cutting Edge Surface
- Bevel Angle less than 3 Degrees
- Small Heat-Affected Zone
- Cuts Well-Defined, Small, Straight Holes



Almost 2X the Number of Cutting Starts

The XTTM-300 consumables are engineered to last. You can expect to see a significant increase in the number of cutting starts you get with each set of consumables. You'll use fewer consumables and spend less time changing them.*

Great \$\$\$ Savings on Consumable Parts

You'll find our consumables are very competitively priced – you can save up to 20%* per set of consumables.

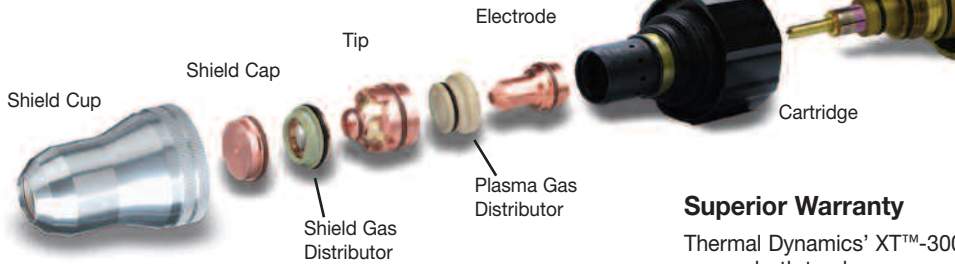
Up to 40% Less Gas Consumption

The XTTM-300 patent-pending torch technology ensures precise gas flow management, and significant savings for you.

* See Competitive Comparisons.

Unique 'Keyless' Consumables Cartridge

The unique Consumables Cartridge houses consumable parts only, no built-in head/torch body to drive replacement costs up. Changing cartridges is fast and easy – a couple of twists and the unique 'rapid engagement' retaining collar threads release the cartridge. Down-time is reduced to minutes and you can change from one process to another or from one application to another quickly and easily.



No Tools Required

Unlike other torches, no tools are required to change either the torch consumables or major components in the Torch Head.

'Leakless' Torch Head Design

Coolant doesn't drip from the torch head when the consumables cartridge is removed from the torch head. No more water running down your arm or air becoming trapped in the leads when you try to change parts.

Self-centering Components Maintain Precise Alignment

Both torch consumable parts and torch body are precisely engineered to lock into place for absolute alignment and remain perfectly positioned cut after cut. Independently-aligned tip and electrode within the torch head assures accurate re-centering of the consumable cartridge after each parts change. Well-defined metal threads on the Torch Head stand up better than plastic to repeated twisting and turning.

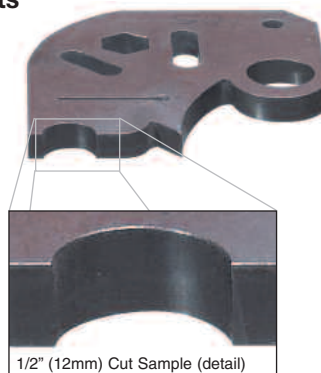
Cut Quality

Beautifully Clean, Smooth, Precise Cutting Results

Designed for high precision cutting on 1/2 inch metal, this uniquely engineered torch provides excellent cutting results on all metals including stainless steel, mild steel, aluminum and non-ferrous materials. With Thermal Dynamics' High Precision Plasma, your cuts will have sharp edges with little or no dross formation, a smooth cutting edge surface and a small heat-affected zone.

Thermal Dynamics High Precision Cutting:

- Holds High Tolerances
- Cuts Small, Straight Holes
- Holds Narrow Curve Radius



Superior Warranty

Thermal Dynamics' XT™-300 Warranty covers both torch components and service for a full 1-year period.

Precision Cuts on all Metals

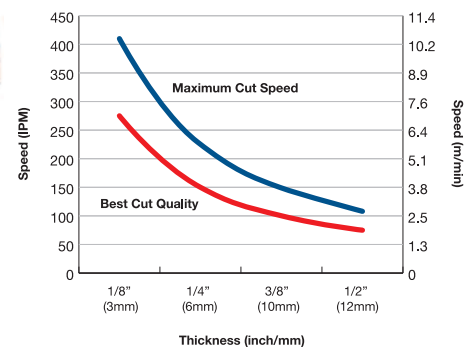
The XT™-300's dual gas technology provides the highest arc density plasma stream in the industry for precision cuts on stainless steel, mild steel, aluminum and other non-ferrous materials. Choices for plasma gas include O₂, N₂-O₂, Ar-H₂-N₂, or Air and shield gas choices include N₂-O₂, N₂, Air-CH₄ or Air.

Relaxed Cutting Parameters – Remarkable Cutting Results

With the XT™-300, cutting parameters don't have to be as exact as with other torches. The operating window permits a +/- 30% travel speed variance which means you'll get great cuts more often and less wasted material and time.

- Less Critical Standoff Height
- Wider 'Operating Window' for Dross-Free Cutting

Best/Max Cut Quality



Competitive Comparisons:

XT™-300 vs. PAC®186

Consumable Parts Life Comparison

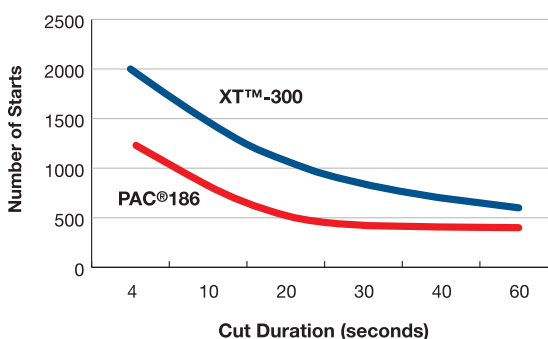
XT™-300 technology provides longer parts life and a straighter cut.

	XT™-300 Torch with HD3070®*	PAC®186 Torch with HD3070®*
Number of (10) Ten Second Cuts	1500	850
Electrode Wear	.040" (1.016mm)	.040" (1.016mm)
Dross Free, Square Cut	less than 3° bevel	less than 6° bevel
Tip and Shield Condition	good	good

* Data gathered by cutting @ 100A with oxygen plasma on 3/8" mild steel using a well maintained HD3070® system. Life values based on .040" hafnium wear depth. Cutting parameters for both the PAC®186 and XT™-300 torches were set to instruction manual values.

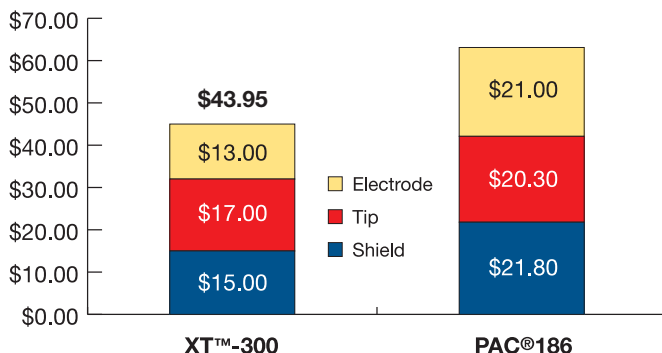
Electrode Life

XT™ Torch Technology offers 50% to 100% more consumable life!



Consumable Price Comparison

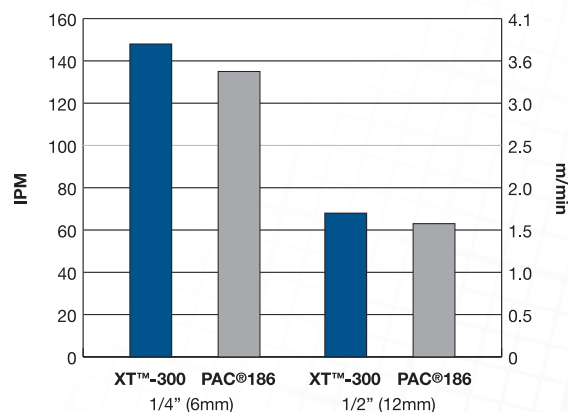
The unique XT™-300 consumable parts designs make it possible to offer the consumables at lower prices. Average cost saving is about 28%.



Prices are for 100A oxygen plasma consumables for cutting mild steel. Data for cost comparisons given according to Hypertherm® Inc. 2004 price list.

Cutting Speed Comparison

Considerably higher XT™-300 cutting speeds deliver more productivity across the whole cutting range.



Data for cut speed comparisons given according to published information from Hypertherm® and Thermal Dynamics®.

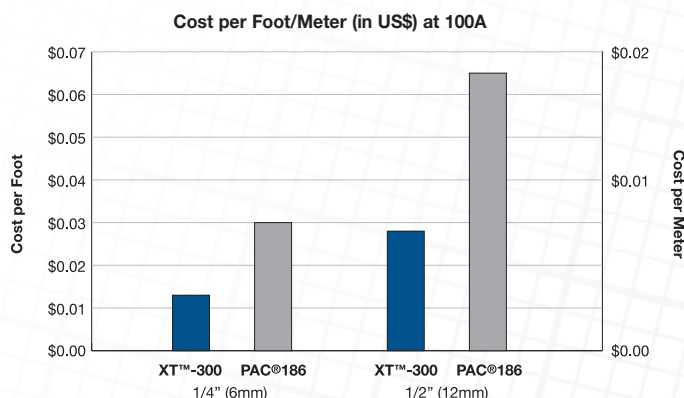
Cost per Foot/Meter Comparison

XT™-300 is the obvious choice . . .

- Better Parts Life
- Lower Prices for Consumable Parts
- Higher Cutting Speeds
- Up to 40% Less Plasma Gas Consumption

Performance comparisons in this document reflect the use of the torches and equipment in good working order, new consumables, published speeds and current set according to published users manuals, accurate torch height control and the torch set perpendicular to the work.

Electrode Life curves for the PAC®186 were generated using data published by Hypertherm® Inc. and confirmed in Thermal Dynamics® Laboratories. XT™-300 electrode life data generated by Thermal Dynamics®.



Competitive Comparisons:

XT™-300 vs. PAC®186

Cost of Operation

Productivity	XT™-300	PAC®186
Material	3/8" (10mm)	3/8" (10mm)
Cutting Speed	100 IPM (2.54 m/min.)	95 IPM (2.41 m/min.)
Length of Perimeter Cut	24" (610mm)	24" (610mm)
Diameter of Internal Cut Holes	1" (25mm)	1" (25mm)
Cut Length of Internal Holes	3.14" (80mm)	3.14" (80mm)
Number of Holes Cut	4	4
Length of Cut per Part	36.56" (929mm)	36.56" (929mm)
Number of Pierces per Part	5	5
Total Time to Complete Each Part (in seconds)*	46.4	46.9
Duty Cycle of Cutting Operation	50%	50%
Cutting Time per Shift (hours)	4.0	4.0
Parts Cut per 8 Hour Shift	307	299
Expected Life in Pierces per Consumable Set**	1,075	525
Length of Cut per Consumable Set	1075 ft. (328m)	552 ft. (168m)
Parts Cut per Consumable Set	353	181
Cost per Consumable Set	\$43.95	\$63.10
Consumable Sets per Shift (shield, tip, electrode)	0.87	1.65
Consumable Cost per Shift	\$39.13	\$104.16
Cost per Year (based on 250 Shifts)	\$9,782.50	\$26,040.00
Annual Savings	\$16,257.50	
Minus Cost of XT-300 Torch Upgrade Kit	- \$1,300.00	
Net Savings	\$14,957.50	SAVE ALMOST \$15,000 PER YEAR FOR ONE SHIFT.

* Includes finding height, traverse moves and cutting time.

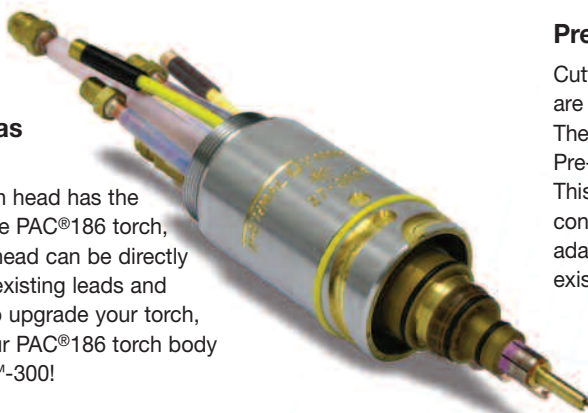
** Based on overall average 20 seconds cut duration.

Note: Above calculations are based on a part cut from 3/8" (10mm) mild steel which includes 24 inches of perimeter cutting, four (4) 1 inch diameter internal holes for a total of five (5) pierces and a total of 36 inches of cutting.

Installation Couldn't be Easier

Same Fittings as the PAC®186

The XT™-300 torch head has the same fittings as the PAC®186 torch, which means the head can be directly connected to the existing leads and mounting tube. To upgrade your torch, simply remove your PAC®186 torch body and install the XT™-300!



Pre-Charge Gas Box Enhances Parts Life

Cutting performance and consumables parts life are improved by installing Thermal Dynamics' Pre-Charge Gas Box. This simple inline connection easily adapts to your existing gas box.



XT™-300

High Precision Plasma Cutting Torch

Specifications

Output Range (A)	30 - 100 Amps
Output (V)	80 - 200 VDC
Duty Cycle (@ 104° F / 40° C)	100% @ 100A
MAX OCV	350 VDC
Pre-Flow Gas	N2-O2, N2, Air @ 115 psi (8 bar)
Plasma Gas	O2, N2-O2, Ar-H2-N2, Air @ 115 psi (8 bar)
Shield Gas	N2-O2, N2, Air-CH4, Air @ 115 psi (8 bar)
Weight	Torch Assy & Mounting Tube – 3 lbs. (1.3kg) Lead Set (15 ft./4.6m) – 12 lbs. (5.4kg) Torch Leads (per ft.) – 0.8 lb. (0.36kg) Torch Solenoid Assy – 6.7 lbs. (3.04kg)
Dimensions	16.2" (411mm) L x 2" (50.85mm) D
Warranty	One Year Parts and Labor (consumables not included)

XT™-300 RPT Kit includes:

- Torch Head
- Pre-Charge Box
- Operator's Manual
- Spare Parts Kit (Consumables for Mild Steel)
- Ohmic Clip

Accessories / Options

- Leather Leads Covers
- Leads Packages 10-100 ft. (3-30 m)
- Ohmic Clip
- Mounting Tube

For complete ordering information contact Thermal Dynamics or your local Thermal Dynamics Automation Distributor.

Cutting Speed Chart

Torch Model		XT™-300				
Precision Plasma Capacity		1/2" (12mm) Piercing / 3/4" (20mm) Maximum				
Material	Current	Material Thickness		Average Cut Speed		Gases
		[inch]	[mm]	[IPM]	[m/min]	
Mild Steel	30A	20 ga.	1	140	3.55	Plasma (O2) Shield (O2-N2)
		14 ga.	2	50	1.30	
		10 ga.	3	30	0.76	
		3/16	5	25	0.64	
	50A	20 ga.	1	209	5.30	
		10 ga.	3	55	1.40	
		3/16	5	47	1.20	
		10 ga.	3	150	3.80	
	70A	1/4	6	114	2.90	
		3/8	10	71	1.80	
		10 ga.	3	275	6.99	
		3/16	5	161	4.10	
100A	1/4	6	150	3.80		
	3/8	10	106	2.70		
	1/2	12	70	1.78		
	5/8	15	51	1.30		
	3/4	20	37	0.95		
	30A	26 ga.	.5	250	6.35	Plasma (Air) Shield (Air)
		20 ga.	1	180	4.60	
		16 ga.	1.5	120	3.04	
14 ga.		2	80	2.00		
50A		14 ga.	2	118	3.00	
		10 ga.	3	55	1.40	
		3/16	5	39	1.00	
		10 ga.	3	100	2.50	
70A	3/16	5	60	1.50		
	1/4	6	55	1.40		
	3/8	10	40	1.00		
	1/2	12	25	0.63		
100A	3/16	5	51	1.30		
	1/4	6	67	1.70		
	3/8	10	59	1.50		
	1/2	12	51	1.30		
Aluminum	50A	5/8	15	39	1.00	Plasma (Ar-H2-N2) Shield (N2)
		20 ga.	1	265	6.72	
		10 ga.	3	200	5.07	
		3/16	5	130	3.30	
	100A	3/16	5	124	3.15	
		1/4	6	100	2.55	
		3/8	10	60	1.52	
		1/2	12	50	1.27	
5/8	15	39	1.00			

Note: Take care in comparison. The speeds noted above are best cut speeds. Often competitors show maximum cutting speeds. Although much higher speeds can be achieved, edge quality and bevel angle may be compromised.



Thermal Dynamics Corp., located at West Lebanon, NH, is an ISO 9001 registered manufacturer.

U.S. Plasma Manual Customer Care: 800-752-7621 / FAX 800-221-4401 • International Customer Care: 905-827-9777 / FAX 905-827-9797
U.S. Plasma Automation Customer Care: 866-279-2628 / FAX 800-221-4401 • www.thermal-dynamics.com



WORLD HEADQUARTERS: 16052 Swingley Ridge Road, Suite 300 • St. Louis, Missouri 63017 U.S.A.

THE AMERICAS

Denton, TX USA
U.S. Customer Care
Ph: (1) 800-426-1888
Ph: (1) 954-727-8371
Fax: (1) 800-535-0557

Miami, FL USA
Sales Office, Latin America
Ph: (1) 954-727-8371
Fax: (1) 954-727-8376

West Lebanon, NH USA
Customer Care, Plasma
Ph: (1) 800-752-7621
Fax: (1) 800-221-4401

Oakville, Ontario, Canada
International Customer Care
Ph: (1) 905-827-9777
Ph: (1) 905-827-9797

Rio de Janeiro, Brazil
Customer Care
Ph: (55) 21-2485-8998
Fax: (55) 21-2485-8866

EUROPE

Chorley, United Kingdom
Customer Care
Ph: (44) 1257-261755
Fax: (44) 1257-224800

Milan, Italy
Sales Office
Ph: (39) 0236546801
Fax: (39) 0236546840

ASIA/PACIFIC

Cikarang, Indonesia
Customer Care
Ph: 62 21+ 8983-0011 / 0012
Fax: 62 21+ 893-6067

Osaka, Japan
Sales Office
Ph: 816-4809-8411
Fax: 816-4809-8412

Melbourne, Australia
Customer Care:
Ph: 1300-654-674
Fax: 613+ 9474-7391

International:
Ph: 613+ 9474-7508
Fax: 613+ 9474-7488

Rawang, Malaysia
Customer Care
Ph: 603+ 6092-2988
Fax: 603+ 6092-1085

Shanghai, China
Sales Office
Ph: 86 21+ 6280-1273
Fax: 86 21+ 3226-0955

Singapore
Sales Office
Ph: 65+ 6832-8066
Fax: 65+ 6763-5812

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